

# Peer Review Framework for the *iGEM Proceedings Journal*

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## In General

First, thank you very much for your cooperation in sending in an article and agreeing to peer-review other manuscripts. This idea would be nothing without all the teams that put a lot of time and effort in!

## Thank you!

Now, there is still quite a bit to do until you can hold the very first iGEM proceedings journal in your hands. The next step is the peer-review.

## What is a peer-review?

Peer-reviews are used as a method for quality assurance. This is achieved by having reviewers, with expertise in the same field (peers), evaluate a work. This provides a form of accountability and assures a high standard for publications.

This guide aims to help you in writing your peer-review. It will guide you through each step in order to assess the quality of the manuscript and give the authors the best feedback to improve it.

## A few things to keep in mind:

- **Be Positive!** Give positive feedback where it is deserved! But be strict if you need to as well.
- **Take your time!** Doing a proper review takes time and effort. Please make sure that you have enough time to give proper feedback about the article. The whole process should take ca. 5 hours per article.
- Write so everyone can easily understand you, even if they are not native English speakers. For example, avoid difficult words.
- Refer to the page and line numbers in the manuscript when giving feedback in this document. For grammar, punctuation and spelling mistakes, correct them in the original document and use the '**track changes**' function (Here is how: <https://bit.ly/3gVAVSd> ).
- Actively insert comments in the original document and also take notes in this document and check the applicable boxes.

- When checking the boxes, put an X in the box that fits best :
  - [-] The authors can improve this aspect
  - [+] The authors did this aspect well
  - [++] The authors did this aspect exemplary
- **Be respectful!** - reviewers and authors are in the same team: Team Science! Your review will help the author to make his article even better, so be objective and constructive.

The peer-review will be conducted in an 'open system'. This means the reviewer and authors will not be anonymous and the revisions and comments will be openly accessible. This way acknowledgments can be given to the input and hard work of the reviewers. An open process also ensures that everyone is doing their very best and treatment will be fair and respectful. In addition to that, it creates a better learning experience for everyone that took part in this collaboration. For this to work every team should appoint 2 team members per article that will review the article. These Reviewers will be acknowledged by name. The 2 reviewers may disagree on certain parts as long as they describe what they disagree on and why. They will need to submit their evaluations in the same documents.

We suggest you do a **skim-read for your first read through** in order to get the bigger picture and answer the following questions:

## The First Read-Through

**What is the main point of this research? (2 sentences; max. 75 words)**

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	-	+	++
The main question is addressed and relevant			
The main question is original and interesting			
Easy to Read and well written?			

The conclusions are consistent with the evidence and arguments presented <sup>1</sup>			
Table and figures add to the article and aid understanding			
The tables or figures are consistent and clear and the amount appropriate			
Is the experimental design precise and appropriate (no flaws)			
The data is sufficient and self-consistent <sup>1</sup>			
Only important and useful data is added			
Does the conclusion answer the main question ?			

After the initial read-trough create a **first short summary** of what the article is about and which major flaws you found. The questions that you should orientate yourself on are:

- Is the paper's premise interesting and important?
- What are the main findings ?
- What problem did it aim to solve ?
- Are the methods used appropriate?
- Do the data support the conclusions?

**Review text (100-250 words)**

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<sup>1</sup> Due to the momentary Covid-Situation, many teams might not have conclusive data or any data at all. This is understandable and absolutely ok. But make sure that they will end up with a conclusion, even if it is just an outlook or suggestions for future research.

## The Second Read-Through - Overview

When reading through the article again you should judge the authors argument construction, language clarity and content.

	-	+	+
• Is the text written in unambiguous language and understandable?			
• Any factual errors?			
• Any invalid arguments?			

	-	+	+
• Does the title fit into the article's topic?			
• Does the Abstract sufficiently summarize the paper?			
• Do the Keywords fit into the Articles topic?			
• The Article has the correct length?			
• Are the paragraphs in the right sections ?			

Try to judge the author's language and how well the text was written, for difficult text it is also important for the reviewer to do their part in understanding the text.

## The Second Read-Through: Section by Section Guidance

## 1.Introduction

**Does the introduction:**

	-	+	+
• Explain the problem thoroughly?			+
• Summarizes previous research on the topic?			
• Highlights gaps in current understanding technologies and conflicts in available knowledge?			
• How original is the work in the topic area?			
• Does the introduction address the target audience properly?			
• Is the research aim fully presented and introduced to in the introduction?			

## Originality

It can be argued by the authors that new research is required because a topic is novel or hasn't been investigated recently and due to new developments in technology or research in other fields demands for reinvestigation. The research should be presented with recent reference. However, methodology and some research may rely on older research, in which case it is acceptable to reference older literature.

## Aims

The introduction usually ends by presenting the aims of the research. However, the introduction should already present the main aspects and knowledge gaps in which the research aim should fit into

### Review text – Introduction (100-250 words)

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## 2. Materials and Methods

The research presented should be reproducible and robust and follow “best practice” .

Is the research reproducible and robust?

	-	+	+
• Enough controls?			
• High enough sample size?			
• Research was repeated if possible?			
• Detailed protocol with step by step instructions on the research performed ?			

### Reproducible Methods

The method section should be written in a way to allow other researchers to reproduce the research and results. All equipment, reagents and sampling methods should be explained in a step by step way (if applicable).

### Robust Methods

Robust Methods mean that sufficient reliable data was collected and full analysis was performed. This includes the use of sufficient sample size and controls where it is needed to confirm findings. Furthermore, the research must be unbiased.

### Best Practice

	-	+	+
The research complies with health and safety standards			
The research complies with common ethical standards			

## Review text - Material and Methods (150-350 words)

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## 3. Results and Discussion

The results should be presented coherently, what happened? How are the results? Things that were discovered or confirmed?:

	-	+	+
• Describes the data collected and their implications?			
• The content is critically analysed? (with statistical analysis where applicable)			
• The trends seen in the data are explained in the wider picture of the topic also by referencing previous research?			
• Presentation of future research and limitations?			

The Discussion should distil the information from the previous section and the data collected. The Authors should summarize the overall development of the topic in the context of the performed research. The “story” should be consistent and present research limitations and future research.

## Review text Results and Discussion (200-350 words)

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## 5. Information and data presentation: Images, Graphs and Data Tables

The data should be presented in an easy to understand way and visually wherever possible. Images and Illustrations should further the understanding of the text and fit into the overall article. Images and Illustrations should be of sufficient quality and graphs and data tables should be correctly labelled.

	-	+	+
<ul style="list-style-type: none"> <li>The data presented in the article support the paper's overall story?</li> </ul>			+
<ul style="list-style-type: none"> <li>There is sufficient data. This includes an appropriate amount of data points with support the trends claimed by the authors.</li> </ul>			+

### Review text Information and data presentation (100-250 word)

[illegible]

## 6. List of References

References should be accurate, trustworthy appropriate of the presented content. The references should be mostly recent and support the authors arguments with in-text citations.

	-	+	+
<ul style="list-style-type: none"> <li>Did they list the relevant literature, without missing an important paper, especially ones that would contradict them?</li> </ul>			
<ul style="list-style-type: none"> <li>Are the references too excessive or too limited?</li> </ul>			
<ul style="list-style-type: none"> <li>Did they use proper APA style referencing?</li> </ul>			



### Review text References and citations (100-250 words)

[illegible]

## 7. Plagiarism

Authors should present the novel aspects of the research, this helps in the understanding of the paper and helps with questions over potential plagiarism. If you think an article has potentially been plagiarised please contact [msp-igem@maastrichtuniversity.nl]. We will also perform a check with an Anti-plagiarism software.

## SUMMARY text (250-500 words)

- What is the strength of the manuscript?
- What are its weaknesses ?
- List the major and minor revisions that you recommend to be done (Just the keywords of things mentioned above)

[illegible]

## Verdict

	What is your verdict about the manuscript?
Accepted as is	
Accepted after revisions	
Major revisions necessary	

### Reviewers (necessary, because it is an open system)

**First Reviewer** – Author name, qualifications, associated institute (if any) and email address.

**Second Reviewer** – Author name, qualifications, associated institute (if any) and email address.

### Last step

**Please reread** your peer review once more to make sure you filled everything in and that your peer review will help the other team to perfect their article for publishing.

### Uploading

When the peer reviewers from your team have filled in this document and also added comments to the original article, please **upload the corrected original article and this peer review framework document with the comment:** “Hi, we are xxx and xxx and we reviewed xxxx this is the filled-in Peer review framework and the corrected article.” You can use the team account for the upload or apply for a personal account on the website. In total you should upload 4 documents, 2 per article.

Make sure to **label the Peer review framework and the corrected article** correctly before uploading!

Corrected article: Team\_name\_Article\_title\_corrected\_Draft\_Reviewerteamname (word document)

Peer review framework: Peer\_review\_Article\_title\_Reviewerteamname (word document or PDF)

Better instructions for the upload can be found in the Email and in the document labelled Upload instructions. **Please follow the instructions!**

Lastly, **thank you very much** for your cooperation in peer-reviewing other teams' manuscripts. This idea would be nothing without you who put a lot of time and effort in!

